



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

2 45 0306 6794



IN MEMORIAM.

J. LAWRENCE SMITH, M. D.

Member of the American National Academy Sciences,
Membre correspondant de l'Institut de France (Académie des Sciences),

Member of the Chemical Society of Berlin;

Of the Chemical Society of Paris; of the Chemical Society of London; of the
Société d'Encouragement pour l'Industrie Nationale; of the Imperial
Mineralogical Society of St. Petersburg. Corresponding Member

of the Boston Society of Natural History; of the American

Academy of Arts and Sciences; of the American Philo-

sophical Society; American Bureau of Mines; the

Société des Sciences et des Arts de Hainaut,

Royal Society of Goettingen, Polytechnic

Society of Kentucky, etc.

Chevalier de la Légion d'Honneur; Member of the Order of Nichan

Iftikhar of Turkey; Member of the Order of Medjidiah

of Turkey; Chevalier of the Imperial Order of

St. Stanislas of Russia.

By MIDDLETON MICHEL, M. D.

[FROM YEAR BOOK CITY OF CHARLESTON, S. C., 1883.]

THE NEWS AND COURIER BOOK PRESSES.

1884.

R
154
S63M6
1884

LANE

MEDICAL



LIBRARY

LEVI COOPER LANE FUND

IN MEMORIAM.

J. LAWRENCE SMITH, M. D.

Member of the American National Academy Sciences,
Membre correspondant de l'Institut de France (Academie des Sciences),
Member of the Chemical Society of Berlin;
Of the Chemical Society of Paris; of the Chemical Society of London; of the
Societe d'Encouragement pour l'Industrie Nationale; of the Imperial
Mineralogical Society of St. Petersburg. Corresponding Member
of the Boston Society of Natural History; of the American
Academy of Arts and Sciences; of the American Philo-
sophical Society; American Bureau of Mines; the
Societe des Sciences et des Arts de Hainaut,
Royal Society of Goettingen, Polytechnic
Society of Kentucky, etc.

Chevalier de la Legion d'Honneur; Member of the Order of Nichan
Iftabar of Turkey; Member of the Order of Medjidiah
of Turkey; Chevalier of the Imperial Order of
St. Stanislas of Russia.

By MIDDLETON MICHEL, M. D.

[FROM YEAR BOOK CITY OF CHARLESTON, S. C., 1883.]

THE NEWS AND COURIER BOOK PRINTER.

1884.

7

THE LIBRARY

1998.1 39A.1

154H
3M6
884

IN MEMORIAM.

J. LAWRENCE SMITH, M. D.

The biography of a great scientist, whose years have been wedded to certain departments in the commonwealth of knowledge, is but the record of empirical researches, discoveries and inventions realized in the quiet retirement of the laboratory, divorced from the exciting events of the historic period by which he may have been surrounded.

This was particularly the case with Professor J. Lawrence Smith, whose devotion to his profession of chemistry, geology and mineralogy excluded active participancy in the memorable incidents through which he passed. In the peaceful paths of science, he continued to prosecute his favorite studies with the earnest and sublime devotion that have earned for him the highest honors his own and European countries could bestow, and have constituted him one of America's most distinguished savants.

Dr. J. Lawrence Smith was born December 17th, 1818. He pursued his initiatory studies under the best instructors, and we learn that such was his predilection for, and proficiency in mathematics that before he could read, and indeed when only four years old, he added and multiplied figures with singular rapidity, was in algebra at eight, and at the age of thirteen was already engaged in the study of calculus. This asserted familiarity with the highest branches of mathematics inducted him into the study of natural philosophy, chemistry and allied branches, in all of which he soon be-

84186

came conspicuous at the Charleston College, and subsequently at the University of Virginia.

Civil engineering was at first the profession of his choice, in which he was actively engaged as assistant engineer during the contemplated project of the railroad between Cincinnati and Charleston; but abandoning this pursuit for the study of medicine, he soon entered the office of Drs. Holbrook and Ogier in this city. It was during this period that a singular interposition of Providence rescued a life which would have been otherwise too soon lost to science. While on his way to a suburban farm near this city in a vehicle with Dr. Ogier and Mr. Grayson, the horses took fright, the vehicle was dashed to pieces, Dr. Ogier was thrown and had his leg broken, and Smith was dragged a considerable distance with one leg engaged within the fifth wheel, until the shock of a collision of the carriage against a tree disentangled his limb, thus saving miraculously both limb and life. Mercifully preserved for a life of usefulness and laborious original research, Smith became unremittingly engaged in his medical studies. He followed three courses of lectures at the Medical College of the State of South Carolina, from which institution he was graduated in March, 1839; after which he visited Paris in the early part of 1840. Here he devoted himself more particularly to his favorite studies of chemistry and physics, and subsequently went to Giessen, where for more than a year he remained as the favorite pupil of Liebig, in whose laboratory he worked as assiduously as he had done previously with Pelouze in Paris.

It was in Paris, in the year 1842, that I became acquainted with Dr. Smith, and enjoyed the advantages of daily and hourly association with one whose friendship and affection have ever since served to endear him to me. It was here I learned to appreciate the admirable traits of character he exhibited, harmoniously blended with exceptional devotion to scientific pursuits, and would bear attestation to the purity of his character and generosity of his nature. Consecrated from boyhood apparently to scientific thought, his only obvious aim was an earnest and determined search after

truth, under the impulses of a genius that knew no rest, and that would not, if it could, evade its destiny. Who would suppose a young man, scarce emancipated from the hoidenish period of youth, could be so engrossed in the fascinations of his daily studies and pursuits, that he should walk for hours of an evening the thoroughfares and byways, boulevards and gardens, of a metropolis like Paris—that centre of fashion and vortex of dissipation—in such oblivious forgetfulness of all his surroundings as was expressed in discussions, how to expound some intricate point of science, or which was the better way perhaps of demonstrating a certain problem in Euclid; yet, the frequent recurrence of such profitable, though obstruse debates, plainly declared that his mental affluence was ever deeply plunged within the mazes of science, and that his was an intelligence so consecrated by nature to the absolute realization of a plan and purpose that ultimate fame seemed already as insured as his knowledge was fixed and profound. It was this early and almost sacred devotion to a mission which won the admiration of an Orfila, and the commendation of a Liebig!

I can here recall my first visit to him on reaching Paris, April, 1842, when I found him immerse in toxicological experiments on animals which he had poisoned with arsenic and had disinterred at various periods after death, with the view of searching for evidences of the drug within the tissues, which researches led to the publication of his papers on arsenic in Silliman's Journal, at the time that Orfila's experiments on the same subject were exciting such attention in the Parisian minds in the memorable case of Madam Lafarge's trial for the poisoning of her husband.

It was also at this period, 1842, that he undertook, at the suggestion of Professor Liebig, to examine the products afforded by the distillation of spermaceti, dissatisfied as he was by the undetermined nature of this part of Chevreul's researches upon the fats. His publication on this subject added greatly to his reputation as an experimental inquirer. With a reputation already established in both continents, he returned to his native home in 1844, and was invited to

the memory of Professor Smith presented to the American Academy of Arts and Sciences of Boston, remarked: "His discovery of emery in Asia Minor destroyed the rapacious monopoly of this article at Naxos, in the Grecian Archipelago, extended its use and greatly reduced its price. His studies on emery and its associate minerals led directly to its discovery in America. In Massachusetts and North Carolina a large industrial product of emery is now carried on. To Dr. Smith belongs the credit of having done almost every thing for these commercial enterprises by his successful researches on emery and corundum." We must record the discovery of two new minerals which he found associated with a specimen of pitchblende in the neighborhood of Adrianople, Turkey, which he respectively called *medjidite* and *liebigite*, in honor of the then reigning Sultan, Abdul-Medjid, and of his distinguished friend Liebig, of Giessen. I also remember his telling me of the astounding and amusing effect he produced upon the Turks when he struck the oxycalcium light in the dome of the Mosque of Constantinople, as it spread the bright effulgence of day over the Capital, when they imagined it must be some extraordinary luminary of the nocturnal skies! In his travels in Western Asia Minor he provided himself with proper appliances for safely transporting to his laboratory, from twenty distinct localities, specimens of those Thermal Waters which were held in such high estimation by the ancient Romans and Greeks for supplying their baths, but which never had been examined. The result of these researches which he made have greatly enhanced their value from a scientific standpoint. Such was the impression of these labors upon the Turkish government, and the large revenues it received from his discoveries, that he was decorated by the Sultan and loaded with valuable presents.

He returned to Charleston in 1850. We had shared but a few months the pleasure which his return to his own people had inspired, when again in November, 1850, he went to New Orleans as nominal professor of chemistry in the University of Louisiana; engaged in lectures and researches

deliver a course of lectures on toxicology at the Medical College of this city, and shortly after he accepted the office tendered him of Assayer of the State of South Carolina, in the discharge of which office he soon discovered the commercial value of the extensive marl beds of Carolina, concerning which he published an important report.

Though he never actively engaged in the practice of medicine, such was his interest in the progress of his profession that he established a Charleston Medical and Surgical Journal, conjointly with Dr. Seaman Sinclair, in 1846. With the exception of a similar effort made as early as 1820, when Dr. Thomas Y. Simons and Dr. William Michel edited the first medical journal ever published in the South, the fulfillment again of such an enterprise in the hands of Dr. Smith successfully developed the literary resources of this section, in centralizing in his journal for many years the authorial ability of the South, at a time when, it must be conceded, we were fairly and impressively convinced of deficiency in this department, in which we were not simply behind our Northern brethren, but, what was yet more regrettable, were literally considered as *hors de combat* ! His work in the direction of agricultural chemistry, particularly so far as the growth of cotton was concerned, attracted the attention of the Turkish government, who solicited the aid of America in this connection. Mr. Buchanan approached Professor Smith upon the subject through Mr. Elmore, and he finally accepted the appointment tendered him by the President of the United States. In 1847 he left his home once more to counsel, advise, and direct in the cultivation of cotton in Asia Minor. He no sooner became fully engaged in the important official work of mining engineering, an office which the Sultan created for him, as an inducement for him to remain in Turkey, that he made the discovery of certain coal mines, chrome ores, and more especially those of emery which in the interest of that country, secured his operations for a series of four years. The publication of an elaborate monograph on emery excited great attention everywhere when it appeared. Dr. J. B. Marvin, in his eloquent tribute to

the memory of Professor Smith presented to the American Academy of Arts and Sciences of Boston, remarked: "His discovery of emery in Asia Minor destroyed the rapacious monopoly of this article at Naxos, in the Grecian Archipelago, extended its use and greatly reduced its price. His studies on emery and its associate minerals led directly to its discovery in America. In Massachusetts and North Carolina a large industrial product of emery is now carried on. To Dr. Smith belongs the credit of having done almost every thing for these commercial enterprises by his successful researches on emery and corundum." We must record the discovery of two new minerals which he found associated with a specimen of pitchblende in the neighborhood of Adrianople, Turkey, which he respectively called *medjidite* and *liebigite*, in honor of the then reigning Sultan, Abdul-Medjid, and of his distinguished friend Liebig, of Giessen. I also remember his telling me of the astounding and amusing effect he produced upon the Turks when he struck the oxycalcium light in the dome of the Mosque of Constantinople, as it spread the bright effulgence of day over the Capital, when they imagined it must be some extraordinary luminary of the nocturnal skies! In his travels in Western Asia Minor he provided himself with proper appliances for safely transporting to his laboratory, from twenty distinct localities, specimens of those Thermal Waters which were held in such high estimation by the ancient Romans and Greeks for supplying their baths, but which never had been examined. The result of these researches which he made have greatly enhanced their value from a scientific standpoint. Such was the impression of these labors upon the Turkish government, and the large revenues it received from his discoveries, that he was decorated by the Sultan and loaded with valuable presents.

He returned to Charleston in 1850. We had shared but a few months the pleasure which his return to his own people had inspired, when again in November, 1850, he went to New Orleans as nominal professor of chemistry in the University of Louisiana; engaged in lectures and researches

in that city until May, 1852; when there occurred a vacancy in the chair of chemistry in the University of Virginia, occasioned by the death of Professor Rodgers, which transferred him to that position, by invitation, in his Alma Mater. In 1854 the resignation of Professor B. Silliman from the Medical Department of the University of Louisville, induced those who had the interest of this institution at heart to tender him the professorship of chemistry, which he promptly accepted. Circumstances influenced him in resigning after many years from these public duties, devoting himself to private laboratory work in an establishment of his own, in which much of his most important and heaviest work was accomplished.

An exhaustive memoir on Meteorites from his pen at this period, calls to mind one of his most important publications, inasmuch as his large collection of these extraordinary bodies from all parts of the world, gave great weight to his opinion and made him a high authority on this debatable subject. The special attraction of this study to the general reader invests with intense interest the author's speculative inquiries into the origin and history of Meteorites; and one peruses with fascinated abstraction the comprehensive analyses by which he rejects the cosmical and interplanetary theories on the one hand, while enforcing chemical, mathematical, and astronomical arguments for the adoption of his more eligible view of the selenic origin of these aerolites with masterly authority. Another paper on Artesian Wells, their nature and origin, chemical and medicinal properties of their waters, was also suggested and published, at this time, in connection with an instructive account of the Dupont's Artesian Well in Louisville, Ky. This was again issued in pamphlet form in 1859.

Had Professor Smith's researches been confined solely to the department of mineralogy, his reputation would nevertheless have been equally great. Besides his individual contributions to this branch of science, he was also engaged while in Virginia in a re-examination of American minerals, and in preparing an elaborate analytic report on the sub-

ject. It has been conjectured that his discovery of a new element, which he named Mosandrum, contributed with his previous and subsequent labors in securing that remarkable vote which placed him among the Members of the Institute of France.

His creative genius was signally exemplified in numerous inventions, of which we must mention his inverted microscope, with which reagents may be safely used upon the stage without danger to the objectives, since by the use of a prism in the cylinder of the instrument the image of the object is obtained from beneath the slide. Queckett acknowledges the worth of this instrument to the chemist particularly. His calcarimeter is especially valuable from simplicity of construction and easy application ; since in the hands of the uninitiated, without even a knowledge of the principle of the instrument, very accurate results are easily obtained in first experiments upon calcareous manures. His eye-piece, micrometer and goniometer are also other inventions well known to all microscopists.

It must devolve, however, upon chemists to speak authoritatively concerning his many contributions to their science ; many, though by no means half of which were in 1873 collected from different periodicals and published in a volume of great interest. His labors in the laboratory and with his pen secured the attention of the scientific world at an early period of his life, as we have seen ; and these, the sum of his life-work, have served not alone to place him in the foremost rank among scientists, but have distinguished him as the recipient of the very highest reward attainable among his contemporaries, for at the death of Sir Charles Lyell, the vacancy left in the Institute of France was unanimously filled by the election of Professor Smith as member of that illustrious body of the world's scientists. This memorable event occurred, as every South Carolinian shall ever remember, in 1879, an honor which identifies him with Franklin of our own country. In his own country he was also President of the American Association for the Advancement of Science.

It has not always been given to the learned to communicate extemporaneously to others what they themselves so well understand; we should not, therefore, disingenuously disguise the fact that in his academic teachings he did not probably realize in the estimation of some that success which so extended a reputation would seem to have implied. If, as Collier declares, "a graceful presence bespeaks acceptance," his surely was so attractive as at once to rivet attention and prejudice an audience in his favor. His prepossessing appearance, his chiseled features of almost effeminate beauty, his light blue eyes and flaxen hair, and the forehead—that showboard of one's intellectual ware—stood revealed as the pediment of a temple dedicated to science; but the accuracy of his knowledge which with him consisted only in what was demonstrable made his teachings apodeictic and his style laconic. His intellectual processes seemed never deflected for an instant from their rectilinear course, and his utterances interpreted them without oratorical embellishment. Borrowing neither the aid of imagery, nor observant even of chastening the language of familiar discourse, it must be confessed that when he became enthusiastic in his subject, in the infelicity of extemporaneous delivery he failed perhaps as a lecturer in fixing the attention of any but of those of a select few who were competent to penetrate his meaning, and fathom the extent of his inferences.

His cheerful nature must have been connate with the seductive attractions of his daily occupations. Dr. Marvin, his family physician, informed me that though he had been declining in health from a chronic affection of the liver for two or three years, yet he continued his indefatigable labors uncomplainingly. Indeed, we may assume that there never was time for despondency so long as he could wander through Nature's store-house in wonderment and in love. He could at all times have exclaimed with the laureat poet:

" And forth into the fields I went,
And Nature's living motion lent
The pulse of hope to discontent."

It is but a few months since, on the 12th October, 1883, at 3 P. M., silently, painlessly, happily, because hopefully, in the distant State of his adoption, the friend of my youthful days passed away; without eulogistic discourse, at his own request, in modest self-forgetfulness of his fame, but after the simple reading of the service of the dead, when his remains were taken to their appointed resting place in Cave Hill Cemetery, Louisville, Kentucky, leaving us all to mourn the death of a renowned scientist.

Professor Smith married the daughter of the Hon. James Guthrie of Louisville, Kentucky; this accomplished lady survives him. He was a member of the following societies: Corresponding Member of the Academy of Sciences of the Institute of France; The American National Academy of Sciences; The Chemical Society of Berlin; The Chemical Society of Paris; Chemical Society of London; Société d'Encouragement pour l'Industrie Nationale; Imperial Mineralogical Society of St. Petersburg; American Association for the Advancement of Science; British Association for the Advancement of Science; Polytechnic Society of Kentucky; Corresponding Member of the Boston Society of Natural History; American Academy of Arts and Sciences; American Philosophical Society; American Bureau of Mines; Société des Sciences et des Arts de Hainaut; Royal Society of Gottingen; Chevalier de la Legion d'Honneur; Member of the Order of Nichan Iftahar of Turkey; Member of the Order of Medjidiah of Turkey; Chevalier of the Imperial Order of St. Stanilas of Russia.

LANE MEDICAL LIBRARY

This book should be returned on or before
the date last stamped below.

--	--	--

R
154
563
M6
1884
LANE
HIST.

